

# UNDERWATER SERVICES



## UNDERWATER INSPECTION AND CONSTRUCTION SERVICES





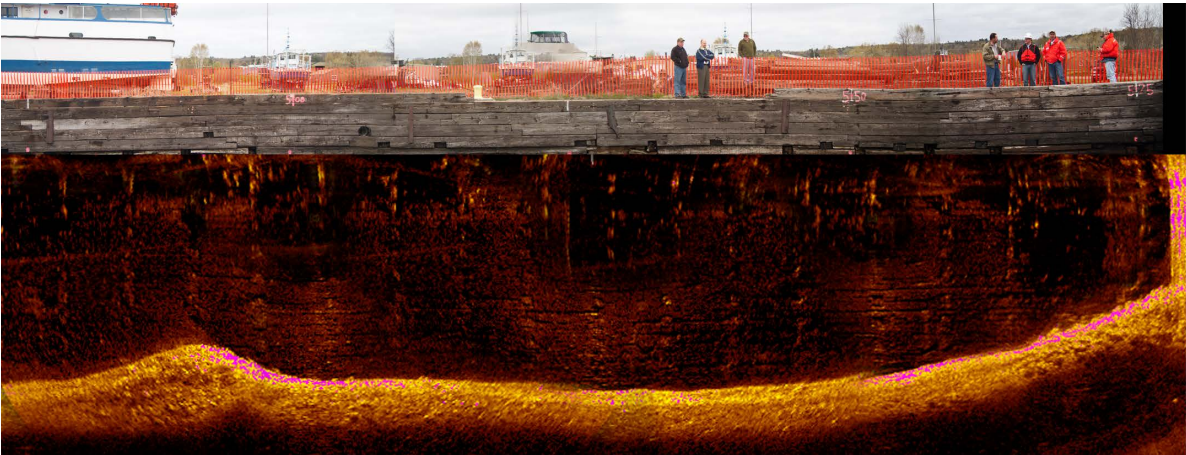
# INSPECTIONS

Our team of more than 60 ADCI certified divers have the latest technologies to aid them in gathering information in various types of underwater conditions. Whether the conditions are extreme temperatures, poor visibility or strong currents, we have the tools and personnel to respond to a wide range of challenges.

- » Bridges
- » Dams (FERC Part 12 and USCOE)
- » Industrial facilities
- » Intakes and outfalls
- » Piers and dock facilities
- » Pipelines
- » Vessels

## Detailed Reporting

We understand that an inspection is only as good as the information communicated. Brennan divers can investigate, record, and effectively report critical information. These reports contain detailed descriptions, CAD drawings, images, and underwater video documentation to help identify any structural concerns.



## Acoustic Imagery

When underwater visibility is limited, acoustic imagery can help clear things up. This technology uses acoustics to create an underwater image of the structure to help detect structural problems and scour issues. Typically these images can be combined with above water digital photography or CAD drawings to create a pictorial reference of the entire structure.

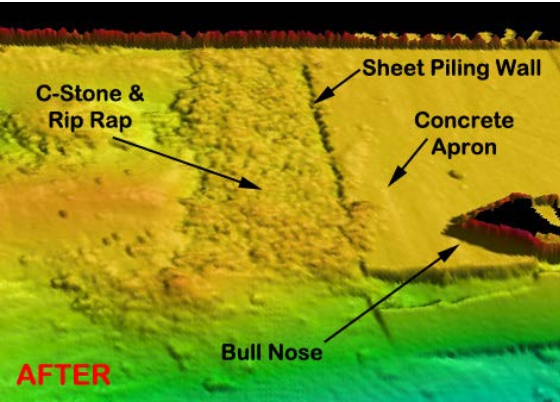
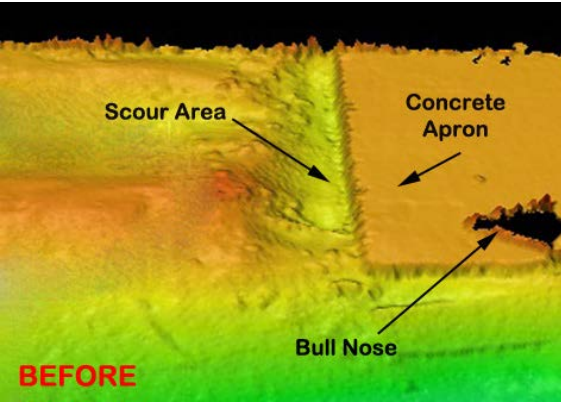


## Remotely Operated Vehicles

Our ROV's can be used to gather information when underwater conditions are unknown. They can be outfitted with HD video systems and sonar imaging equipment to navigate and collect valuable information. These vehicles are ideal for pipeline penetrations, or deployment in conditions unsafe for diver entry.

## Bathymetric Surveys

Brennan has a full time survey department with licensed hydrographers capable of providing georeferenced, 3-dimensional models of subaqueous structures and surfaces. This ability combined with a detailed dive inspection will leave little to the imagination.





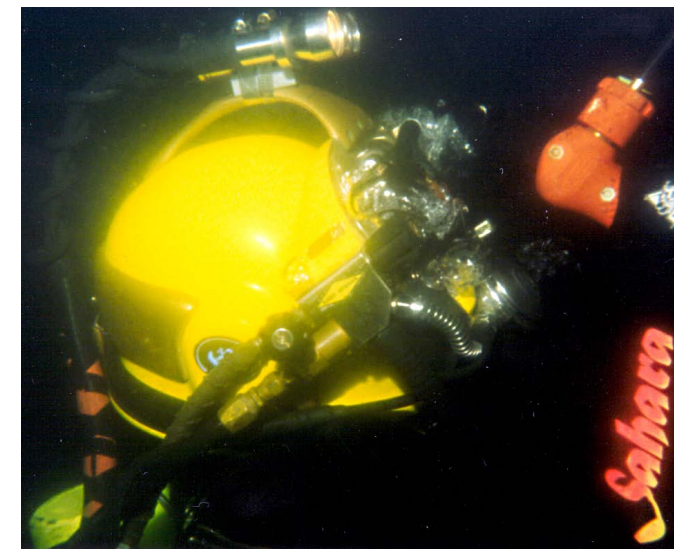
Brennan divers are experienced, certified commercial divers with the knowledge necessary to complete the project safely, on schedule and within budget. We are very familiar with water-based infrastructure as well as underwater construction techniques. Outfitted with state-of-the-art equipment, our divers can handle even the most challenging environments.

- » Concrete Placement
- » Pressure Grouting
- » Welding and Burning
- » Scour and Erosion



### Concrete Repair

Our dive teams can utilize multiple options for the repair of damaged concrete or the construction of an entirely new structure. The use of divers to complete underwater concrete repairs and construction can eliminate the need for costly cofferdams or bulkheads. Underwater concrete options include : conventional concrete, pre-placed aggregate concrete (PAC) and pre-cast concrete.



### Welding and Burning

When underwater structures require welding or burning operations Brennan divers have the skill set and training needed to complete the project. Underwater welding and burning is an inherently dangerous underwater activity. The introduction of electrical currents into the diver's work area, the build-up of explosives gases created by the procedure and the increased possibility of diver entrapment are all risks faced during these activities. The completion of a welding procedure program, a comprehensive Dive Plan, trained divers and proper equipment are all paramount to the completion of a safe project.

### Deep Dive Capabilities

Brennan divers are able to perform in deep-water conditions using our decompression chamber. This gives us the ability to provide our clients with quality services on deep water structures or in emergency salvage situations.

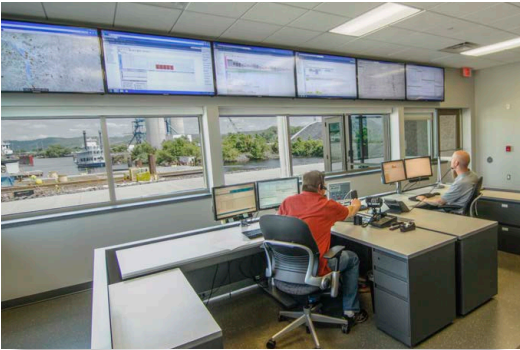




Salvage

The combination of Brennan's experienced inland commercial divers and our heavy-lift marine plants provides an invaluable resource to those in need of salvage services.

- » Lightering
- » Hull repairs
- » Heavy picks
- » Vessel and barge recovery
- » Emergency response



24 Hour Dispatch

Call the Brennan dispatch center open 24 hours per day, 365 days per year for any emergency needs.

**1-800-658-9027**

Ship Husbandry

Our dive teams have been performing Coast Guard approved, In-water hull inspections since the program's approval in the 1990s. Our knowledge of vessel maintenance and repair options can help prevent costly vessel down time, keep you on schedule avoid the additional cost of dry docking.

- » U.S. Coast Guard approved In-water hull inspections
- » Propeller clearing
- » Propeller and shaft change-outs
- » Cooling system repairs
- » Valve replacements
- » Hull cleaning



Industrial Services

Industrial Diving can be some of the harshest environments a diver will face. High water temperatures, zero visibility, contaminated water, and limited access are only a few of the conditions the dive team may face on a typical day. Our team will work with plant managers to develop a safe and efficient dive plan that will minimize any necessary facility downtimes and maximize project safety.

- |                                   |                              |
|-----------------------------------|------------------------------|
| » Aeration systems                | » Pipe and valve replacement |
| » Clarifier maintenance           | » Potable water              |
| » HAZMAT remediation              | » Traveling screens          |
| » Intake and discharge structures | » Trash racks                |
| » Micro dredging                  | » Zebra Mussel removal       |





